How geographic mobility contributes to exposure to political difference on social media platforms

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ABSTRACT

Prevalent theory explaining why and how people encounter political difference on social media platforms ascribes an important role for weakened geographic boundaries. Yet, research has yet to test the role of geography in producing these encounters. This study fills that gap in the literature by testing the proposition that the more a person moves, the more political difference they will encounter on social media platforms. To do so, the study offers a constructive critique and amendment of theory to incorporate geographic mobility and geographic difference in political discussion. Then, drawing on a national online survey sample reflecting the target population of adult internet users in the United States ($N = 1493$), it uses confirmatory factor analysis (CFA) and structural equation modeling (SEM) to test the relationships between these variables and other dimensions of difference in political discussion on social media platforms. Results show geographic mobility is indirectly related to political difference through geographic difference. Results are discussed in light of their implications for our understanding of how media technologies contribute to political communication in contemporary American society.

1. How geographic mobility contributes to exposure to political difference on social media platforms

Exposure to political difference on social media platforms is a topic of widespread interest to academics, tech companies, policy makers, and the public. While questions of when, where, and how often people encounter cross-cutting exposure have been classic topics in political communication for years (e.g., Conover et al., 2002; Huckfeldt et al., 2004; Mutz, 2006), they have received renewed attention from academic research with the rise of social media platforms (e.g., Barnidge, 2017; Colleoni et al., 2014; Heatherly et al., 2017), because these questions engage public conversations about how platforms shape contemporary political communication. This study builds on that work, motivated by the idea that exposure to political difference on social media platforms is in part shaped by users' geographic mobility.

The leading theoretical framework for explaining exposure to political difference in online media ascribes an important role to weakening the geographic boundaries that characterize face-to-face communication (Brundidge, 2010). Yet, connection and interaction on social media platforms are structured by geography (Takhteyev et al., 2012). Social media platforms have thus provided a digital map of geographic boundaries rather than eliminating them completely. Moreover, they also provide a blueprint for how people traverse them via geographic mobility: When people move, they articulate new social connections with people who live in different geographic areas and, thus, who are embedded in different communication ecologies. This structural diversification of communication

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brought about by geographic mobility produces more cross-cutting conversations.

Despite these clear propositions, research has yet to examine how geography produces politically different encounters on social media platforms. This study fills that gap in the literature by studying these processes in the United States. To do so, I offer a constructive critique of the inadvertency hypothesis (Brundidge, 2010), and then I develop the notion of geographic difference in political discussion based on prior work on communication ecology (Broad et al., 2013) and discussion diversity (Eveland and Hively, 2009). Finally, drawing on a national online survey ($N = 1,493$), I test predictions about how geographic difference relates to other dimensions of discussion difference and facilitates connection between geographic mobility and political difference. Results are discussed in light of their implications for our understanding of media technologies and their contributions to political communication.

2. Theory and literature

2.1. The role of geography in the inadvertency hypothesis

The concept of geography features prominently in the leading theory of how people encounter political difference in the online public sphere. In a seminal work on the subject, Brundidge (2010) outlines the "inadvertency hypothesis," which suggests exposure to political difference is largely incidental—the byproduct of communicating and interacting with others in online spaces for other purposes. The idea rests on three premises: (1) imperfect selectivity of like-minded content; (2) non-avoidance of political difference; and (3) weakened social boundaries. The geographic boundaries that structure offline communication are included in the third premise, and Brundidge asserts "the geographic boundaries that determine the heterogeneity of a particular population do not bind the Internet" (p. 682).

Unpacking this claim, Brundidge points toward research documenting the ways in which local geography shapes the heterogeneity of in-person social networks and the political discussions that occur within them (Blau, 1977; Scheufele et al., 2006). Residential balkanization adds a political layer to this structuration, as geographic constraints increasingly preclude encounters with the other side (Bishop, 2008; Mutz, 2006). But online media, Brundidge argues, are not constrained by these same structures, allowing for communication with people in "far-flung geographic locations" (p. 680) within "heterogeneous networks extending across the globe" (p. 684). Thus, from its origins scholarship on the inadvertency hypothesis made an optimistic forecast about the potential for online media to overcome geographic constraints by fostering encounters with people in different locations.

Brundidge's work has provided the theoretical foundation for the study of political difference online, and it stands as a counterpoint to popular but less well supported ideas about "echo chambers" and "filter bubbles." The piece is widely cited by scholars studying anonymous online chat (e.g., Barnidge, 2017; Bond and Sweitzer, 2018), online and mobile messaging apps (e.g., Barnidge, 2020; Schmidt et al., 2019), and social media platforms (e.g., Barnidge, 2017; Colleoni et al., 2014; Heatherly et al., 2017). Much of this research has investigated some of the component arguments comprising the inadvertency hypothesis, including imperfect selectivity and/or and non-avoidance (e.g., Anspach, 2017; Weeks et al., 2017), as well as interaction with weak ties (e.g., Lu et al., 2018; Matthes et al., 2020). But despite its role in the inadvertency hypotheses, research has not tested how geography produces politically different encounters.

2.2. Geographic structures in social media connection and interaction

While online media afford the possibility of connecting and interacting with people around the world, connection and communication in online spaces are not free of geographic constraints. Social media, in particular, are characterized by norms of connection emphasizing the articulation of pre-existing social relationships in digital form (boyd and Ellison, 2007)—that is, users mostly connect with people they already know.

Of course, there are important platform differences in this regard. For example, while it would be counter-normative to "friend request" a complete stranger on Facebook, which requires reciprocity in connection (Baym, 2015), it is normal to follow strangers on Twitter or Instagram, where reciprocity is not required. That said, it would easy to exaggerate the extent to which Twitter and Instagram loosen geographical constraints in practice. One study shows 39% of ties on Twitter lie within the same metropolitan area, and connection with very distant others is uncommon (Takhteyev et al., 2012). The primary exception to this rule are "jet-setters," who are more likely than other users to connect with people who live in very distant locations. But in the case of frequent flyers, their networks appear to be geographically diverse because they physically travelled to different areas and, presumably, met people in person before connecting with them on Twitter. Subsequent research has reached a similar conclusion: Despite the possibility of global reach, social connection and communication on Twitter are structured by geography (Grabowicz et al., 2014; Hawelka et al., 2014; Kulshrestha et al., 2012; Lengyel et al., 2015; Quercia et al., 2012; Stephens and Poorthuis, 2015; but see Leetaru et al., 2013).

To the extent that Twitter and Instagram do facilitate connection and interaction with far-flung social ties, there is a good reason to believe these kinds of connections will not produce substantially higher levels of exposure to political difference. Reciprocal connection generally occurs for reasons other than personal interests (for example, attending the same school or having friends in common), and this type of social connection tends to sustain political disagreement within social networks (Huckfeldt et al., 2004). By contrast, non-reciprocal connection leans more heavily on individuals' personal interests, and therefore social ties may be selected specifically because of politics (Bond and Sweitzer, 2018; Colleoni et al., 2014). These social ties are more likely to be pre-screened for political agreement, which counteracts whatever diversity in viewpoints is gained by connecting with people in different geographic areas.

In sum, social media, including Twitter and Instagram, have not eliminated geographic structures in social connection so much as

they have provided a digital map of those structures. Moreover, geographic mobility provides a blueprint for how people traverse those structures. The more a person moves—that is, relocates their primary residence to a different city or town—the more likely they are to meet and connect with people in different geographic areas. If these connections are mapped onto social media platforms, their social media networks will be more geographically diverse. This geographic diversity will result in more frequent encounters with the other side. Thus, even on Twitter and Instagram but especially on Facebook, exposure to political difference will vary according to an individual's level of geographic mobility.

2.3. Communication ecology: From network structure to content

The concept of communication ecology helps us to understand how the geographic broadening of connection structures results in the diversification of communication content. The concept dates back to Altheide's (1994) work, which models contingencies in communication processes by developing a "spatial and relational basis" for understanding "how parameters of communication are influencing communication content in distinctive ways" (p. 667). Thus, from the outset, scholarship on communication ecology sought to explain how local context shapes both mediated and interpersonal communication. The concept was further developed alongside Communication Infrastructure Theory, which studied storytelling networks in the Greater Los Angeles area (Kim and Ball-Rokeach, 2006). According to this perspective, communication ecology refers to mediated, interpersonal, and organizational connections in a local communication environment, including social networks, local media, and community organizations (Broad et al., 2013). Communication ecologies connect individuals to macro-level social forces through community infrastructure, which includes physical and digital space, technological, economic, and organizational resources, and sociocultural and psychological factors that facilitate or inhibit communication. These factors shape the context of communication, and explain differences in content across different contexts (Giles et al., 2006).

Social media platforms are integrated into and also shaped by communication ecologies. Because social connection on these platforms is structured by local geography, social networks articulated on these platforms tend to reflect the structures of interpersonal connections in a given area. Moreover, news and community organizations are also embedded within these networks, andsocial media networks integrate these various facets of local communication infrastructure and make them visible via content curation (Thorson and Wells, 2016). Thus, news and community information is shared, spread, and aggregated within ecological structures, and, therefore, communication on social media platforms is constrained by these ecologies.

However, in another way, social media platforms can be used as a tool for expanding communication beyond these constraints by mapping geographically distant social connections onto social media platforms. People in different geographic areas are embedded in different communication ecologies, which means they are likely to share different kinds of news and information, and, because news exposure is related to political discussion on these platforms (Barnidge, 2015; Shah et al., 2017), they are also likely to engage in different kinds of political discussions, as well. These conversations, being manifestations of more diverse underlying structures of social connection and communication, are likely to expose individuals to cross-cutting political views (Conover et al., 2002).

2.4. Geographic difference in political discussion

Prior research has treated geographic difference as a relational variable operationalized as physical distance, as indicated by geolocation data from social media posts, between two social media ties (e.g., Lengyel et al., 2015; Takhteyev et al., 2012). But the concept also has the properties of an ego-centric variable. That is, individuals interact with other social media users who live closer to and further from them. An individuals' average geographic difference can then be articulated by considering all of that person's interactions, and this average will, of course, vary from person to person. A person who primarily interacts with others who live in the same city as them will have a lower average distance than a person who more frequently interacts with others who live in a different geographic area, and, thus, the second person's interactions can be said to be more geographically different than the first person's interactions.

For a variety of reasons, including its normative importance for democratic societies (Gutmann and Thompson, 1998; Mansbridge, 1999) and the fact that it is "thick" interaction with multiple describable dimensions (Conover et al., 2002; Eveland and Hively, 2009), political discussion has been used to characterize the heterogeneity of social networks. Scholarship has tended to focus on two types of diversity and/or difference in political discussion: difference in socio-structural position and difference in terms of political views. Literature on the former dimension traces back to Granovetter's (1973) classic scholarship on the "strength of weak ties," which illustrates how weak ties provide novel information. By contrast, McAdam (1986) shows how strong ties are more effective at mobilizing people for high-cost behavior. Literature on the latter dimension dates back to the earliest studies in political communication (Lazarsfeld et al., 1944), but reached a golden age during the "deliberative turn" of the 1990s and 2000s, with works such as Huckfeldt and colleagues' *Political Disagreement* (2004) and Mutz's *Hearing the Other Side* (2006). These scholars emphasized the importance of exposure to different views in discussion, and disagreed (no pun intended) about its prevalence in American society.

These two dimensions of discussion difference are conceptually distinct, each arising from its own intellectual traditions and each characterized by distinct empirical properties. Likewise, geographic difference is conceptually and empirically distinct from either. Though geographically different discussion is more likely with weak ties, it can also occur between strong ties (e.g., family members living in different cities). While geographically different discussion is more likely to produce disagreement than geographically similar discussion, it could also produce agreement. Moreover, geographic difference is operationalized differently than other dimensions, as it relies on questions asking people whether they discuss politics with people living in different places from them. Based on these unique conceptual and empirical properties, I expect geographic difference to be distinct from other dimensions of discussion

difference.

H1: The indicators of difference in political discussion on social media platforms will load onto three factors: geographic difference, difference in tie strength, and political difference.

2.5. Geographic mobility and difference in political discussion

The logic of the inadvertency hypothesis should be amended to account for the geographic structuration of social media connections, and this updated logic can be used to derive predictions about the relationship between geographic mobility and exposure to difference in political discussion on these platforms. While no formalized prediction was presented about geographic difference in political discussion, per se, the logic of the inadvertency hypothesis relies, to a substantial degree, on the idea that online interactions will be geographically different. Bolstered by a refined understanding of the geographic structuration of online social connection, we can amend the (unformalized) hypothesis to be not about mere *use* of digital media platforms, but rather about geographic mobility. That is, geographic mobility should be positively related to geographic difference in discussion, because the more a person moves, the more they map social connections from different geographic areas onto social media platforms.

H2: Geographic mobility will be positively related to geographic difference in political discussion on social media platforms.

This brings us to the crux of the inadvertency hypothesis—the relationship between online media use and exposure to political difference in social media discussion (Brundidge, 2010). This paper contends that difference arises in part from the geographic mobility of it users because discussants who are geographically distant are more likely to introduce novel information and ideas originating from different communication ecologies. Geographic and political difference are distinct structural characteristics of social relationships that exist independently from political discussion or any other type of social interaction, and are realized through discussion, which makes apparent the differences arising from geographic distance. Hence, geographic mobility should be indirectly related to political difference via geographic difference.

H3: Geographic mobility will be indirectly and positively related to political difference through geographic difference.

The indirect relationships above describe a theoretically plausible pathway to discussion with politically different individuals on social media platforms. However, the indirect route may not provide a complete explanation, as there are other reasons why geographic mobility may be linked to political difference. For example, the experience of moving and interacting with different people may foster a greater appreciation for difference. Therefore, mobility may encourage a willingness to engage in politically different discussions independently from the geographic location of discussants. To account for these other possibilities, a direct relationship between geographic mobility and political difference is hypothesized that represents the remaining variance in the relationship not explained by the indirect pathway.

H4: Geographic mobility will be directly and positively related to political difference.

3. Context of study

It is important to describe geographic mobility and exposure to political difference in the United States in order to contextualize the findings (Rojas and Valenzuela, 2019). Despite a long tradition of geographic mobility, the U.S. Census Bureau has tracked a 35-year decline. The U.S. mobility rate was higher than 20% in 1985, but it had declined to less than 10% by 2019. This mobility rate is lower than that of Australia (~15%), but higher than that of the European Union (~5%). Demographic groups who are more likely to move include younger people, more educated people, people with higher annual household income, and immigrants. Declines in geographic mobility are thought to be related to lower levels of fluidity in certain occupations, but counter-valent trends are observed within the "knowledge economy." The United States also has limited public space compared to other countries (Toloudi, 2016). Combined with low availability of public transportation, Americans have fewer opportunities to converse with strangers. These trends are exacerbated by ideological sorting in residency patterns (Bishop, 2008), which limits exposure to political difference in face-to-face conservations (Mutz, 2006). These dynamics heighten the importance of digital platforms as a venue for public discussion and exposure to difference in the United States.

4. Methods

4.1. Sample and data

The study relies on a cross-sectional online survey fielded between September 19–29, 2018, six weeks before the 2018 U.S. Midterm Elections. The survey was administered by Survey Sampling International (SSI)/ Research Now (now Dynata), which selected subjects from an online panel using quotas for age, gender, race, and census region. These quotas were based on parameters from the U.S. Census Bureau's 2016 American Community Survey. The survey has a cooperation rate of 70% (AAPOR, 2016; CR3), which is an appropriate metric to report for online panel surveys (Callegero et al., 2014). The sample reflects the population of interest (see Appendix A). The data were filtered by social media use (79% users; $N = 1,175$). Predictive mean matching was used to impute missing values. These comprise 20 cases (1.7% of the sub-sample) on 8 variables, and are missing completely at random (MCAR).

4.2. Measures

Descriptive statistics for all measures are reported in Table 1 and question wording for the independent and dependent variables is

provided in Appendix B.

4.2.1. Social media discussion difference

The discussion difference items reflect three dimensions of difference: *geographic difference* (Brundidge, 2010), *weak ties* (Granovetter, 1973), and *political difference* (Mutz, 2006). Respondents were asked how often (1 = Never, 7 = Very Often) they have "talked about government, elections, politics, or the news" on social media with (a) people who live in a different city (i.e., "different city"), (b) people who live in a different country ("different country"), (c) coworkers or classmates ("coworkers/classmates"), (d) other acquaintances ("acquaintances"), (e) people who hold very different views ("different views"), (f) people on the left, and (g) people on the right. The last two items (left and right) were used to create an "other side" measure. They were recoded based on respondents' own political preferences (as indicated by the average of standardized scores on the political ideology and partisan identity items described below). Item "left" indicated discussion with the "other side" for people on the right, whereas item "right" was used for people on the left.

4.2.2. Geographic mobility

The *geographic mobility* items were borrowed from the American Community Survey (ACS), and they ask respondents how many cities or towns they have lived in over (a) the last five years and (b) the last ten years. Observations on the two items overlap, as the first is a subset of the second. This overlap produces a relatively strong correlation ($r = 0.75$), although they are not perfectly correlated, which indicates that people who frequently moved within the past five years didn't necessarily move a lot in five years prior to that timeframe. Thus, including both items separates recent mobility patterns from longer-term patterns, increasing variation in measurement and reducing the possibility of overestimating mobility.

4.2.3. Control variables

The analyses control for face-to-face discussion difference, social media discussion with strong ties, social media discussion network size, political preferences, and demographics. First, it is important to control for *face-to-face discussion difference* to isolate social media difference and its relationship with geographic mobility. These items parallel the social media items in question wording, measurement scales, and recoding procedures. Second, it is important to control *social media strong tie discussion* in order to isolate the influence of discussion with weak ties. These items mirror the measures for weak tie discussion, but ask about discussion with (a) family members and (b) friends. These two items were averaged for each respondent ($r = 0.81$). Third, network diversity is related to network size, and so the analysis controls for *social media discussion network size*. The questionnaire asked respondents to enumerate how many people with whom they talk about "government, elections, politics, or the news" on social media platforms, and this item was unobtrusively logged to reduce skew. Fourth, the analysis controls for *frequency of internet use*, which was measured by asking respondents how often they are "online on a typical day during waking hours" (1 = Never Online, 7 = Always Online). Fifth, because political difference is defined, in part, by political preferences, it is important to control for both *ideological extremity* and *strength of party identity*. The former

Table 1
Descriptive Statistics.

Variable	Mean	Standard Deviation
Social Media Discussion Difference		
Different City	2.7	2.1
Different Country	2.1	1.8
Other Side	2.4	1.9
Different Views	2.6	2.0
Coworker/Classmate	2.3	1.9
Acquaintance	2.4	1.9
Geographic Mobility		
Last Five Years	1.6	1.6
Last Ten Years	2.2	2.1
Face-to-Face Discussion Difference		
Different City	3.1	2.0
Different Country	2.3	1.9
Other Side	2.9	1.9
Different Views	3.3	1.9
Coworker/Classmate	3.0	2.0
Acquaintance	2.7	1.9
Social Media Strong Ties Discussion	3.0	2.1
Social Media Discussion Network Size	1.2	1.6
Frequency of Internet Use	5.1	1.5
Ideological Extremity	2.1	1.8
Strength of Party Identity	1.9	1.1
Age	45.4	15.8
Gender (1 = Female)	0.6	0.5
Education	4.3	1.7
Income	4.7	2.1
Note: N = 1,175.		

variable takes the average of three L-R scales (1 = Very Liberal, 6 = Neutral, 11 = Very Conservative) asking respondents about social issues, economic issues, and general ideology. The resulting scale was folded so that 1 = Neutral and 6 = Extreme. The latter variable relies on three items borrowed from the American National Election Studies, which ask respondents to name a party, describe the strength of their identification with that party (if a party was named), and explain the direction to which they lean (if a party was not named). These items were used to create an index where 3 = Strong Republican, 0 = Independent, and −3 = Strong Democrat. Finally, the analysis controls for standard demographics, including *age, gender* (1 = female), *education* (1 = Some high school and 7 = Post-graduate degree), and *annual household income* (1 = Less than $15,000 and 8 = More than $150,000).

5. Analysis and results

The first hypothesis predicts the political discussion difference items will load onto three factors, and confirmatory factor analysis (CFA) was used to test this hypothesis. The variables were residualized on the controls (see Appendix C for correlation matrix), and then three nested models (one-factor, two-factor, and three-factor) were tested and compared. The one-factor model is not a good fit to the data (χ^2 (9) = 333.61, $p < .001$), and the two-factor model does not provide an improvement ($\Delta_{\chi 2}$ = 0.35, *n.s.*). By contrast, the three-factor model is the best fitting model (χ^2 (6) = 44.25, $p < .001$), and it provides an improvement over the two-factor model ($\Delta_{\chi 2}$ = 289.01, $p < .001$). The chi-square statistic for the three-factor model is statistically significant, which is not ideal. However, the chi-square is influenced by sample size, which means goodness of fit should be determined by other fit measures that adjust for sample size or rely on prediction error. Adjusted chi-square indices exceed widely accepted thresholds for model fit (Hu and Bentler, 1999), with a GFI of 0.988, a CFI of 0.984, and a TLI of 0.959. Meanwhile, error-based indices also meet the criteria for good model with, with an RMSEA value less than 0.080 (0.074, $p = .024$) and an SRMR of less than 0.060 (0.024). Thus, the three-factor model is a good fit to the data according to these widely accepted criteria. Therefore, the results support H1, and confirm that a three-factor model is the best fit to the data (see Appendix C for a summary table).

Completely standardized results from the model are reported in Fig. 1. The standardized factor loadings are generally strong. All but two of the loadings are above 0.80, with the exception of the loading for the "different country" ($\lambda = 0.63$) and "coworker" ($\lambda = 0.57$) items. Still, these loadings indicate a strong influence of the latent factor on the observed variables in question, and overall the model provides evidence of construct validity for the three factors—that is, similar items in the model are influenced by the same latent factors. This construct validity is important to establish given the strong correlations among the latent factors, with standardized covariance estimates ranging from $\psi = 0.44$ to 0.76.

Having established a three-factor model is the best fit to the data, H2-H4 are tested using a structural equation model (SEM) including both direct and indirect relationships between mobility and political difference. The model was fit to the data using the three-factor structure for the exogenous variables residualized on the same set of controls used in the CFA, while also layering on two indicators of geographic mobility, which are manifest from a fourth latent factor. The weak ties variable is treated as a covariate in this model, as it does not feature centrally in the hypothesized relationships. However, it is nonetheless important to include it in the model
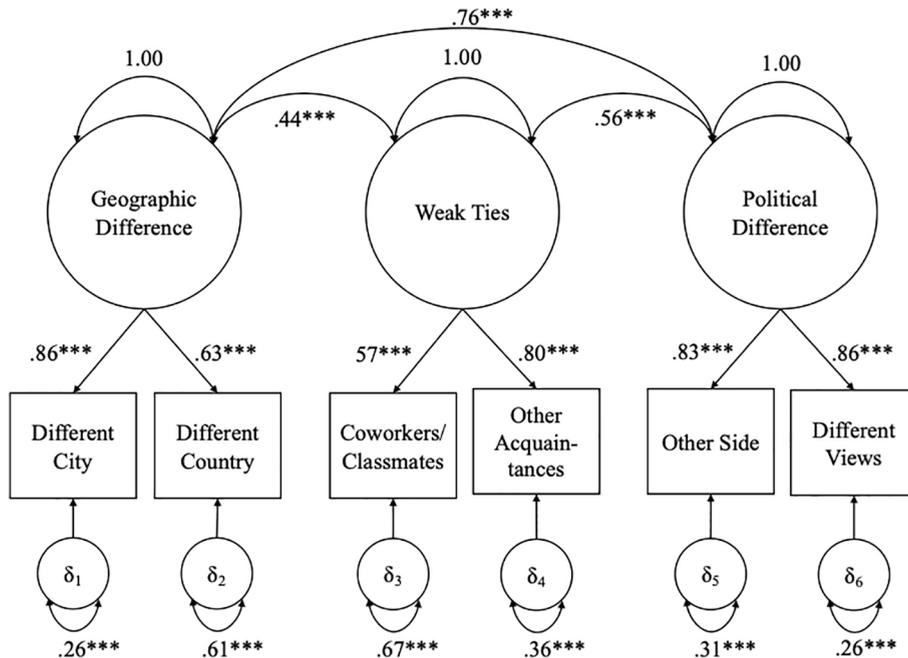

Fig. 1. *Results from Measurement Model Note*: Completely standardized solution is reported. All items residualized on controls. χ^2 (6) = 44.25, $p < .001$; GFI = 0.988; CFI = 0.984; TLI = 0.959; RMSEA = 0.074, $p = .024$; SRMR = 0.024. N = 1,175; ***$p < .001$.

due to its theoretical relevance and empirical relationships with the other latent variables in the model. Results are reported in Fig. 2 (see Appendix C for correlation matrix). The model is a good fit to the data. While the chi-square statistic is statistically significant (χ^2 (15) = 55.04, $p < .001$), other fit measures indicate a good model fit (GFI = 0.989, CFI = 0.988, TLI = 0.977, RMSEA = 0.048, $p = .586$, SRMR = 0.022).

H2 predicts geographic mobility will be positively and directly related to exposure to geographic difference in political discussion on social media, and results are supportive of this hypothesis. Geographic mobility is positively related to geographic difference (β = 0.10, $SE = 0.03$, $p < .01$). Meanwhile, H3 predicts geographic mobility will be indirectly and positively related to political difference through geographic difference, and results also support this hypothesis with a significant and positive indirect effect ($\gamma\beta$ = 0.08, SE = 0.03, $p < .01$). Finally, H4 predicted a direct and positive relationship between geographic mobility and political difference, and results also support this hypothesis (β = 0.06, SE = 0.03, $p < .05$). Put together, the direct and indirect effects estimates add up to a total effect estimate of 0.13 (SE = 0.03, $p < .001$). Results of these mediation tests are reported in Table 2.

It is also worthwhile to report the covariance estimates for weak ties, which is positively and significantly related to all three latent variables in the mediation process. The strongest relationship is observed with geographic difference (β = 0.44, SE = 0.04, $p < .001$), followed by political difference (β = 0.33, SE = 0.04, $p < .001$), and finally geographic mobility (β = 0.11, SE = 0.04, $p < .01$). These relatively strong relationships speak to the importance of including weak ties as a covariate, as it is empirically related to all variables in the mediation process, and doing so increases confidence that the other effects estimates are not spurious.

6. Discussion

I began with the core idea that exposure to political difference on social media platforms is in part shaped by the geographic mobility of its users. Exploring how geographic mobility is related to the diversification of networks helps us refine theoretical models about how online media facilitate exposure to political difference. Refining theory is important because it helps us to understand the limits and possibilities of online communities in facilitating rich, cross-cutting networks of association and conversation. This manuscript takes a first step at refining a critical facet of the inadvertency hypothesis (Brundidge, 2010). Drawing from prior literature on the geographic structuration of social media (Takhteyev et al., 2012), theory about communication ecology (Broad et al., 2013), and research on discussion networks (Eveland and Hively, 2009), the study offers concrete, testable hypotheses regarding the role of geographic mobility in facilitating exposure to political difference on social media platforms. Thus, the study advances theory by testing a specific set of relationships between mobility and discussion difference as established by a critical review of prior literature.

The results support the study's predictions and establish an indirect relationship between geographic mobility and exposure to
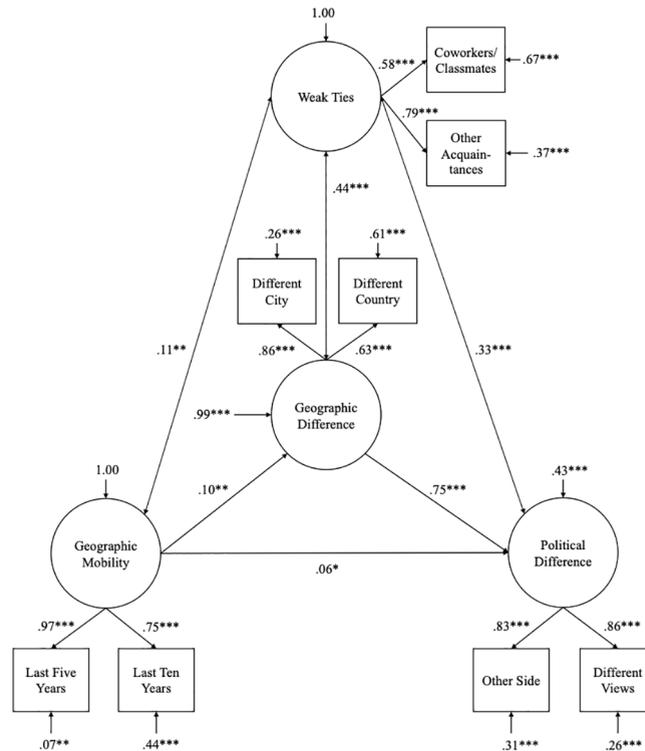

Fig. 2. *Results from Structural Model Note:* Completely standardized solution is reported. All observed endogenous items are residualized on the controls. χ^2 (15) = 55.04, $p < .001$; GFI = 0.989; CFI = 0.988; TLI = 0.977; RMSEA = 0.048, p = .586; SRMR = 0.022. N = 1,175; *$p < .05$, **$p < .01$, ***$p < .001$.

Table 2
Direct and Indirect Relationships Estimated from Structural Model.

Effect of Geographic Mobility on Political Difference	β
Direct Effect	0.06*
Indirect Effect via Geographic Difference	0.08**
Total Effect	0.13***

Note: Cell entries are standardized estimates (β) of direct and indirect effects from a structural equation model (SEM). The discrepancy between the total effect and sum of direct and indirect effects is due to rounding.

$N = 1,175$; *$p < .05$, **$p < .01$, ***$p < .001$.

political difference in social media discussions. While the study also finds a direct relationship between these variables, speaking to the possibility of other explanations for the relationship, establishing the indirect connection via geographic difference represents an important step forward in the development of theory about exposure to political difference in online spaces. Connections on social media platforms reflect geographic constraints, but geographic mobility represents one possible way to build a diverse set of connections within that set of constraints. As people move from city to city, they integrate social contacts from different places into their social media networks, and these contacts are embedded in different communication ecologies. One outcome of this diversification is exposure to difference in political discussion not only in terms of geography, but also political views. This insight is important because it moves theory beyond sweepingly optimistic prognostications about the ability of online media to facilitate cross-cutting exposure, and toward a systematic understanding of when exposure is more or less likely based on the geographic mobility of users.

It is important to consider the study's limitations before turning to its implications. First, the survey is cross-sectional, and therefore time order cannot be established and the possibility of spuriousness cannot be ruled out. While the study uses a "conceptually prior" independent variable, and it has made an effort to control for alternative explanatory variables, these data should not be used to make causal inferences, but rather they should be treated as baseline tests to be replicated in future research. This test of the theory should therefore be considered preliminary, and future research should test time order and rule out alternative explanations. Second, while the sample reflects the target population along key criteria, SSI relies on quota sampling and sample matching techniques, and is therefore not a true probability sample. These data are therefore better for testing relationships between variables than they are for obtaining representative point estimates. Similarly, SEM is unable to rule out statistically equivalent models, and the model presented in this manuscript should therefore be interpreted with appropriate caution.

Other limitations are related to measurement. For example, the study relies on self-reported measures, and it is possible respondents have systematically over- or underestimated mobility and/or exposure to difference in discussion. Future research could examine the relationship between geographic mobility and discussion difference using "linkage" studies combining survey responses with social media content. Additionally, future research could also incorporate a measure of weak tie discussion that focuses on relationships that are typically geographically distant, such as former classmates or acquaintances from a past place of residence. Future models should also control for frequency of social media use. While this study included internet use a proxy, a more direct measure would provide a more precise control.

Turning now to the study's implications, the findings imply systematic variation in exposure to political difference may be linked to offline social inequalities. To the extent that geographic mobility is correlated with socioeconomic status or class, discrepancies in exposure to political difference based on geographic mobility could represent a new form of digital inequality, an idea that is related to the concept of *maintained social capital*. Ellison et al. (2007) provide evidence that social media platforms afford users that ability to "maintain valuable connections as one progresses through life changes," including "[w]hen a person moves from the geographic location in which their network was formed and thus loses access to those social resources" (p. 1148). Arguably, political difference can be viewed as a manifestation of those same social resources, as discussion with the other side typically results from being embedded in rich, cross-cutting networks of association that comprise a range of political and social backgrounds and perspectives (Mutz, 2006). Therefore, differences in exposure to political difference may partly arise from network-based inequalities that reflect or exacerbate long-standing offline social inequalities in the United States.

In fact, the U.S. Census Bureau indicates two groups of individuals are most likely to be geographically mobile. The first group is young, educated individuals from high-SES or middle-class backgrounds. The second group is immigrants. While the pursuit of economic opportunity motivates both groups, the contours of those opportunities, as well as the costs involved in pursuing them, are quite different. The former group enjoys high levels of choice and low social costs in pursuing economic opportunity, while the latter group probably (but not necessarily) faces less choice and higher social costs. Thus, geographic mobility in the United States appears to be a bimodal phenomenon, and there are qualitatively different research questions arising for each group pertaining to the link between mobility and digital communication. In-depth inquiry into both groups is not only warranted, but necessary in order to flesh out how each group compares to the rather large subset of the U.S. population that is not geographically mobile. By addressing these questions, future research could uncover the ways in which social media platforms replicate or ameliorate offline social inequalities based on class, race, and nativity.

Second, the question of lifecycle effects is another important line of future inquiry, particularly as they overlap with generational differences in platform preference in the United States. Platforms have different norms of connection related to symmetry and geographic breadth. Social connection on Instagram tends to be broader than on Facebook, but it is also asymmetrical. Connection on Snapchat, meanwhile, is symmetrical, but much narrower than on Facebook. These differences in social connection matter because

they tend produce differences in political disagreement over time. Evidence shows that users of social networking sites such as Facebook report relatively high levels of incidental news exposure, which is linked to disagreement (Barnidge, 2020). By contrast, heavy users of other social media platforms report lower levels of incidental exposure, and its relationship with disagreement is weaker.

These differences are significant because evidence also shows a generational effect in platform preference. According to Pew Research Center (2019), younger individuals name Instagram and Snapchat as their preferred platforms, whereas older individuals name Facebook and Twitter. Thus, as younger individuals eschew the sites that afford relatively frequent opportunities for discussion and disagreement in favor of those where discussion of news and public affairs is less common, the effects of mobility on exposure to political difference could be diminished among people of those generations. Overlapping with this apparent generational effect, the Census Bureau's data highlights what appears to be a clear lifecycle effect in mobility: Younger, college-educated individuals are more likely to move to a different city in order to jump start their careers in the knowledge economy, whereas older, college-educated individuals are less likely to relocate for work, because they are more established in their careers. In other words, people in the United States become more rooted as they age. Putting these strands together, exposure to political difference among the age groups that prefer Facebook and Twitter could be limited in the near future as those individuals enter a more sedentary life phase, and exposure to political difference among the age groups that prefer other platforms is already limited by the relative paucity of news and discussion on those platforms. Coming to terms with generational differences in platform preferences, particularly as they intersect with lifecycle effects in geographic mobility, will help us to better understand systematic patterns in social connection on these platforms.

Third, the findings point toward the limits of online communities in facilitating exposure to cross-cutting networks of association and discussion. Because online communities reflect offline structures of social connection to a substantial degree, individuals situated in rich communication ecologies are more likely to encounter cross-cutting political discussions, as well as news and community information that broadens their perspectives on social and political issues. By contrast, individuals situated in communication-poor ecologies are less likely to encounter these kinds of content. Therefore, future research should add community-level context to the study of social media platforms, with a focus on understanding the constraints geography imposes on online communities, as well as practices and strategies users employ to overcome these constraints. Doing so is important in the context of the United States, which, with some variation across locations, features fewer opportunities to interact with strangers (Toloudi, 2016) and engage in cross-cutting conversation in face-to-face settings (Mutz, 2006). Thus, American society is relatively dependent on social media platforms to facilitate such interactions, and understanding variation across geographical areas is an important avenue for future research.

7. Conclusion

The growing academic and public interest in social media's influence on political communication is reflected in a growing body of literature on exposure to political difference on these platforms, as well as robust public conversations about "filter bubbles" and homophily in social networks. This interest warranted—social media platforms shape exposure to political information and public sentiment about current affairs around the world. Despite this high level of interest, research has not, until now, investigated the role of geography in shaping exposure. This study takes a first step toward doing so, testing hypotheses about the role of geographic mobility in shaping exposure to political difference, establishing an indirect relationship between these variables. Thus, the study advances theory by offering a refinement of the inadvertency hypotheses, with the aim of improving its ability to explain when exposure to political difference on social media platforms is more or less likely.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tele.2022.101781.

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